

# **HANFORD SITE TECHNOLOGY COORDINATION GROUP MANAGEMENT COUNCIL MEETING MINUTES**

**May 17, 2001  
EESB Snoqualmie Room  
8:15 a.m. – 11:45 a.m.**

## **INTRODUCTIONS/ANNOUNCEMENTS**

Marcus reviewed the meeting agenda. Paul Kruger introduced Terry Walton, who is now functioning as the co-chair for the STCG Management Council. Terry said that Fluor Hanford (FH) has a technology management function to try to get technologies inserted into the projects. FH recently signed a Memorandum of Agreement (MOA) with PNNL. Under the MOA, FH assigned the responsibility for Technology Management to PNNL. The Technology Management office also has Numatec and FH staff. Meaningful technologies are showing results with ROI analysis.

## **UPDATE OF SITEWIDE S&T ASSESSMENT**

**Rich Holten and Jim Hanson, RL; Tom Wood and Wayne Johnson, PNNL**

Rich and Wayne gave the presentation on the S&T Assessment. Wayne and Tom have been responsible for putting the document together.

### **S&T Plan Background**

- Gerald Boyd request (August 2000) – What are the key technology initiatives to make Hanford 2012 successful and more long-term? What are the big-ticket items needed to close the Site? He asked for a plan in the next couple of months. Our draft went to HQ in February 2001. This is primarily an RL document; we need to coordinate with ORP to include them. They have a similar effort underway.
- Comments were requested by April 16, but the comment period has been extended.
- Comments received are looking for more linkage to Hanford 2012 and other S&T activities and national programs.
- Gerald held our document up and said this is what he wants to see from other sites.

### **Path Forward**

- The document is still getting reviews – still need formal comments from HQ.
- We will look at the comments – then decide whether to update this document or to incorporate them into the next phase.
- We need to update the Site baseline to reflect the 11 S&T challenges and the key decision points.
- We want to show on the baseline where and when technologies are needed.

- We want to begin some S&T roadmapping activities to address the challenges and opportunities and to identify technology needs.
- Results will be used at the Site level for strategic planning, long-term decision-making, and contract development.
- Results will be used at the project level to support S&T needs updates, Technology Insertion Points, and technology demonstrations and deployments.

Wayne will be gathering comments. We don't have much money this year to kick off roadmaps. By September/October we should know what our FY02 budget looks like, and that will determine our path forward.

#### Role of S&T Plan

- Tactical needs
  - Focus on near-term needs at the sub-project level.
  - Continue annual submittals of proposals to the Focus Areas and responses to other S&T proposal calls.
- Strategic Needs
  - Longer-term needs
  - Generally wouldn't meet criteria for near-term deployments.
  - May have higher potential for solution by national programs.

Strategic needs must be addressed as well as tactical needs. We need to spend time as a group looking at long-term needs for the Site.

#### Questions/Comments:

Dirk Dunning: The turnaround time for review of the S&T Assessment was too short. He will look at it some more. Changes in the budget could result in many changes.

Kevin Leary asked about the application of barriers.

Answer: There is so little work being done on barriers. We need to look at barrier failure and barrier design. Albuquerque has done some good work. Linda Fassbender said that the Subcon Subgroup is planning a half-day workshop on surface barriers, tentatively scheduled for June 19. They are currently trying to determine the level of interest at the Site for such a workshop.

Pam Brown stated her concern about stakeholder participation. When our meetings only occur quarterly, it doesn't do the job of involving stakeholders. She doesn't think the quarterly meetings are working, and said we need monthly meetings of the Management Council.

Answer: The S&T Assessment document is in a very early stage of infancy. We don't know how much money we will have to do workshops. Pam proposed a workshop to get collaborative discussion.

Jerry White: SCFA is developing a long-term plan for caps and covers. BHI and PNNL have already been working together with them, but the June workshop is a good idea to get our ideas together.

Terry Walton said he really likes the S&T Assessment. It serves as a good foundation, built from the baseline. There is nothing new in the document. The contractors own the tactical area. Response: The baseline does not include money for S&T. We need to start putting S&T money into the baseline to show what we need.

Billie Mauss: She is surprised that we are in this level of maturity based on the interactions she's had. The STCG website did not say that the document was a draft, or that we were seeking comments. HQ is under the impression that it's final.

Beth Bilson: We have some challenges in our baseline that we don't know how to do. We should be looking at how our needs compare with the needs across the Complex and acknowledge which needs HQ may fund and which we should fund ourselves.

Pete Knollmeyer said the funding is here to use technology. We just need to find better ways of doing things and change the baseline.

Terry Walton: Can you spend today's money to look at out-year problems?

Pete: Yes, we have to make those investments.

## **S&T NEEDS FOR LONG-TERM STEWARDSHIP**

**Jim Daily, RL; Brian Opitz, PNNL**

Once the Hanford Site is closed, \$41 million per year will be spent on long-term stewardship (LTS) activities. About 800 acres of surface barriers will be required at 300 sites in the 200 Areas. Early investments can result in savings. Stewardship is already underway at Hanford (ALE, the Wahluke Slope, Horn Rapids, the 100 Area, the River Corridor).

The January 2001 NDAA report (DOE/EM-0563) that was issued to Congress identified sites that would be in stewardship by 2006. Hanford has to deal with some very complex issues in terms of LTS.

Components of LTS include:

- Institutional controls (badging, monitoring, etc.)
- Near-field engineered controls and performance validation
- Far-field site monitoring and assessment
- Information management
- Long-Term Resource Management

We looked at the S&T needs related to LTS, Groundwater/Vadose Zone (GW/VZ), and the 11 technical challenges in the S&T Assessment compared to the LTS components listed above. The key areas where LTS can make a difference are:

- Site monitoring and system performance assessment – sensors, remote monitoring
- Information management – records storage and preservation
- Knowledge transfer – keeping society current
- Barriers – improving performance to reduce costs
- Decision-support tools – integrated models and risk evaluation techniques – need to integrate health technology with risk-based tools to plan for future needs of barrier performance and monitoring.
- Subsurface fate and transport understanding
- Long-term resource management – natural resources (animals, plants, surface water, Columbia River)

Future STCG interactions:

- Hanford Site Long-Term Stewardship Plan draft in FY02 – will get STCG to review and comment
- INEEL Long-Term Stewardship Roadmap in FY02 (for DOE Complex) – INEEL has been identified as the lead S&T lab for LTS. Jim Werner was replaced by Dave Geiser; he is coordinating through INEEL.

Questions/Comments:

Gordon: To what extent is EPA involved in LTS?

Answer: We are trying to integrate with any available technologies, and are working with other sites.

Jim Honeyman: How do you deal with post-closure sites from a programmatic perspective?

Answer: We are working right now with the Integration program.

Dib Goswami: How is the program funded at Hanford?

Answer: Through Division programs. It is not a major program at Hanford – we don't have formal funding from HQ yet.

#### Jim Daily – Status and Preliminary Thinking with Regard to Stewardship

Definition: The Site LTS mission includes the management of risks associated with the residual contamination from cleanup activities, and the preservation and protection of the natural, cultural and socio-economic resources. Hanford is using a “good steward” model of liability management and resource management.

At the national level, DOE is organizing and planning for LTS:

- NDAA Report
- PEIS Study

- NAC Report
- ELI/ECA Report
- LTS Strategic Plan – (Carolyn Huntoon says all sites must have one by 2004)
- Site LTS Plans
- Executive Steering Committee
- Leadership Changes
- Additional activities

At the Complex level, DOE has made some assignments for LTS:

- INEEL is designated lead lab and lead field office for LTS
- Grand junction is responsible for closed sites, transferring to INEEL
- Executive Steering Committee chaired by INEEL
- Pilot Projects Solicitation scheduled

At the local level, DOE is also organizing and planning for LTS:

- RL is in the process of updating its 1996 Strategic Plan, and it will include a LTS component.
- By 2045, the Site will be in LTS.
- LTS Plan Appendix A – Institutional control portion in draft for 7-31-01 issue to EPA.
- Balance of Hanford LTS Plan will be finished by November 2001, including an S&T chapter.
- Separate PBSs for near-term and post-closure stewardship
- Idaho is doing a LTS S&T roadmap modeled after the GW/VZ roadmap.
- Once we have a decent draft of that, we would like to come back and brief the Management Council again.

Questions/Comments:

Pete Knollmeyer: Will there be funding coming from the Lead Lab? How do we get a fair share?

Answer: Yes, we will get part of the \$8M.

Dennis Faulk asked if they had any interaction with CRESP.

Answer: Yes, and we should strengthen that relationship.

Wade Ballard: The linkage of S&T is weak. It needs to be elevated.

Response: The LTS plan has an explicit WBS called S&T Development that cuts across all the other functions/activities. Hopefully we will have done a good job in bringing S&T to the overall plan.

## **HANFORD TECHNOLOGY UPDATE**

**Terry Walton, FH; Jerry White, BHI**

Terry Walton, FH

Terry reported that FH has been awarded a new six-year contract extension that has natural drivers to help the S&T program. It includes multi-year performance incentives as well as stretch and super-stretch goals. That moves the target out six years, where they have the opportunity to impact the baseline and save money.

Good news:

- Shipping Hanford waste to WIPP
- Expedited stabilization of plutonium
- Removed radioactive waste from facilities in the 300 Area
- Safely moved spent fuel away from the river

Current S&T Initiatives:

- Robotics (Robotic work platform, ARTISIAN arm, T-Plant Tower, Oceaneering System)
- Plutonium Canister Monitoring – Less than a year ago, they came up with the concept. It was proposed to NMFA, but didn't get funded. It links the pressure sensor already used on site with the monitoring system at PNNL. They are making progress in getting items inserted in canisters, and they have a baseline change request in process to deploy the technology in FY02. Long-term savings are probably \$18-20M for the Site.
- Hot Box Furnace System
- Others -- PU Stabilization and Magnesium Hydroxide; ATG Demonstration

Understanding the challenges:

- Accelerated closure teams: PFP; SNF
- Technical Reviews: WRAP Glovebox Conversion; Monolithic Cell Removal
- Support to Value Engineering studies
- Decision Support

They are trying to communicate through programmatic risk tools the S&T opportunities that are available.

Future Near-Term Initiatives:

- SNF (process enhancements; sludge capture, removal, monitoring; basin deactivation)
- PFP (treatment of high-chloride oxides; implementation of canister monitoring)
- Waste Management (RH TRU challenges)
- River Corridor (facility deactivation)

Future Long-Term Initiatives – Nine of the 11 long-term challenges are contained in the FH work scope.

Jerry White, BHI

Bechtel Hanford's agenda is:

- Decontamination and Decommissioning

- Environmental Restoration
- Support to DOE Office of Science and Technology

BHI does not have a long-term contract, which is a disadvantage.

### Decontamination and Decommissioning

Partnerships with the D&D Focus Area:

- C-Reactor Interim Safe Storage Large-Scale Demonstration and Deployment Project
- Canyon Disposition Initiative (CDI) Project
- F-Reactor Fuel Storage Basin Cleanout Accelerated Site Technology Deployment Project

The CDI project crosses most EM boundaries. The first phase of the project is characterization to support detailed evaluation of final disposition alternatives, resulting in a Record of Decision. Areas of technology needs include remote operations, radiation survey, liquids detection, and concrete characterization. A remote characterization platform was deployed to reduce risk to workers in characterizing hazardous areas.

CDI Project Rollup:

- 13 technology deployments
- Technologies helped achieve project characterization requirements defined by the Sampling and Analysis Plan
- Remote technologies enabled characterization of areas inaccessible to workers
- Technologies directly resulted in incremental cost savings and also contribute to a potential \$1B cost savings for the project overall.
- Decision next fiscal year

F-Reactor FSB Cleanout Project technologies to reduce risk to workers through remote characterization and operations in the FSB:

- GammaCam
- In Situ Object Counting System (ISOCS)
- Remote work platform (Brokk)

### Environmental Restoration

Progress to date:

- Deployed In Situ Redox Manipulation (ISRM) to treat chromium in the 100 Area
- Passive Soil Vapor Extraction Technology to remove carbon tetrachloride (CCl<sub>4</sub>)
- Deployed six different technologies for characterization of groundwater
- Nearing completion on two Innovative Treatment Remediation Demonstrations (ITRDs) – Sr-90 at N-Springs and carbon tetrachloride characterization and remediation. The Sr-90 ITRD final report is due in May/June 2001, and the CCl<sub>4</sub> ITRD final report is due in December 2001.

Future Focus:

- Provide better characterization for looking at deep DNAPL – 3-year contracts funded through NETL to demonstrate deep access technologies (cone penetrometer combined with laser) – should be awarded in a month or so.
- Uranium characterization/remediation through MSE – 3-year contract to gather and synthesize information (develop conceptual model in support of remediation and recommend technologies)
- SCFA Quick Win proposal – CC14 characterization tools. Decision expected shortly.

Support to DOE Office of Science and Technology

EM-50 Core Planning Team:

- Development of strategies to improve program effectiveness
- Documentation of program changes and strategy implementation – strategies will be documented in a new Program Plan. Focus is to try to build more tie-ins to the end users and to partner with the sites to solve problems.

SCFA Lead Lab:

- Develop SCFA strategy – moving away from deployments to solving problems
- Improve ties between SCFA and end users
- Develop partnering opportunities between sites (looking at all site needs to coordinate)

Summary

- Technologies have been integral in meeting ER project objectives at the Hanford Site
- Partnership with EM-50 has provided the means to maximize the use of improved technologies
- Over 40 technology deployments
- Greater than \$100M in life-cycle cost savings
- Significant schedule improvement over baseline

Pam Brown: Is there coordination between BHI and FH on the canyons?

Answer: Yes, there are lots of technology-related interactions.

**DISCUSSION ON MANAGEMENT COUNCIL TECHNICAL TOPICS**

**Paul Kruger, RL**

We have a very powerful group. We need to brainstorm about what we can do to reap the benefits of this group.

We would like to suggest meetings focused on the technical topics in the 11 S&T challenges. We could extend the meetings to a full day. Some of the updates and presentations could be given in a more compressed manner (two hours), and the remainder of the day would focus on one of the challenges. We would address the long-term needs, potential solutions, and progress on some of the planned solutions. Technology is not just developing a machine or widget, but also addresses new thought

processes (roofs on CDI, etc.) With that, we wanted to generate some dialog to hear your views on this approach.

Paul distributed the list of 11 S&T challenges:

1. Retrieval of Remote-Handled Waste
2. RH-TRU Handling and Disposition
3. Highly Contaminated Facility Deactivation and Decommissioning
4. Nuclear Material Management
5. Groundwater/Vadose Zone Phenomenology
6. Groundwater Remediation
7. Subsurface Soil Access
8. Surface Barriers
9. Canyon Disposition
10. Final Reactor Disposition
11. Integration with ORP – Final closure and remediation of waste tanks and surrounding areas has challenges similar to those facing RL. RL and ORP are committed to working together to solve common challenges facing both operations offices.

Pam Brown: This is an excellent idea. Focusing on one subject would allow specific people who were interested in that subject to come to the meeting. The HAB has restructured and now has “Issue Managers”. The STCG needs to coordinate with the HAB.

Dirk Dunning: DOE can come to the stakeholders earlier with more open-ended discussion about what to do with the carbon tet, the pre-1970 TRU, the residual tank wastes, etc.

Jerry White suggested that we develop a strawman to figure out where we are today with the challenge so the group doesn’t have to spend most the day on that. We should clarify the objectives and the desired outputs of the meeting in advance. We don’t want to focus on why we can’t do something.

Paul Kruger would like to go forward and pilot one of these meetings for a one-day session. Then he would like to do some brainstorming with the group to see how that worked and then restructure the

meetings based on the comments on how the first meeting went. He distributed the list of S&T challenges and asked for a vote to determine the first topic.

## **UPDATES**

### **Announcements / General Information – Paul Kruger**

Paul announced that Teresa Fryberger is now Gerald Boyd's Deputy and is focusing on strategic planning. Maybe she would attend one of our workshops.

The S&T Assessment was presented to Gerald and he was complimentary about it. It looks across the Hanford Site and gives him a nice package to go to the Hill and argue for budgets. We need to go back to address some areas in more depth.

Comprehensive worker health and monitoring program: PNNL has some initiatives – the Breathalyzer for chemical exposure that helps to assess worker exposures. Gerald is interested in providing funding for that, but feels that EH should take the lead. Then he will provide matching funds.

Corporate performance measures: There is a goal of 18 deployments for RL and five for ORP. Gerald is looking at corporate stretch goals to reach larger numbers. The stretch goal for RL is 23.

Budget: The Congressional request for EM was \$196M. There would be significant reductions for Subcon, Mixed Waste, and D&D under that scenario. That would result in significant challenges to maintaining technology programs at Hanford.

Pam Brown reported that the HAB wants a presentation on technology issues. One idea is to ask each Subgroup to identify a couple of Issues of interest. Pam and Gordon would coordinate, but Terry and Jerry could provide updates on issues, what's been done, and future plans. These updates should be put in the context of why the Board should care about technology.

### **Opportunities – SCFA Quick Win, Applied Research, Nuclear Materials Focus Area, and ASTD Proposals – Bill Bonner, PNNL**

- One proposal was submitted for the SCFA Quick Win Call: Delineation and Remediation of DNAPLs in the Vadose Zone Using Advanced Cone Penetrometer Tools.
- We are doing some planning and preparation for the Applied Research Call.
- NMFA proposals are subject to change – we are still working on these.
- ASTD - \$10M for this activity – hoping the call will be released in June.

## **FUTURE AGENDA ITEMS / WRAP-UP**

- ORP Technology update – CHG; Bechtel National (Billie Mauss)
- Update from TFA on tank issues in the Complex (Pam Brown)
- What did the Site produce over time? (Dirk Dunning – address offline)
- Sr-90 ITRD Final Report
- Concentrated Cr sites and diffuse sites (Dirk Dunning)
- CDI Update / T-Plant Update (Wade Riggsbee)
- Hand out results of poll on technical topics (Larry Gadbois)
- Hanford technologies deployed at other sites (e.g., ORNL and SR) (Dirk Dunning)
- Subgroup reports when something of interest has happened (Marcus Glasper)
- How to restructure meetings
- STCG Mission Statement (offline – send out for comments) – ad hoc committee can resolve comments and prepare a proposal

## **TOUR – Pit Viper Technology Demonstration at HAMMER**

During the afternoon, the STCG members took a tour of the Pit Viper Technology Demonstration at HAMMER.

## **NEXT MEETING**

The next meeting will be announced soon.

## **ACTION ITEMS**

- Send information on planned Surface Barrier Workshop to all STCG members (Linda Fassbender).

- Prepare a presentation on technology for the HAB in coordination w/Pam Brown and Gordon Rogers (Terry Walton in coordination with Paul Kruger and Marcus Glasper).
- Analyze the data from our workshop survey to select and establish the next workshop topic in conjunction with the next quarterly STCG meeting. Also, publish this data via e-mail after its analyses (Marcus Glasper).